

**REMARKS**

This Amendment after Final is filed in response to the Final Office Action mailed June 2, 2006. The Applicant respectfully requests reconsideration of the rejections and entry of this Amendment. All objections and rejections are respectfully traversed.

Claims 1-15, 17-27, 29-31, 33-38, 40-45, 47-48 50-52, and 54-67 are pending in the case.

No claims have been amended.

No claims have been added.

Claim 49 has been cancelled.

***Claim Objections***

At paragraph 1 of the Final Office Action claim 49 was objected to as containing an informality. Claim 49 has been cancelled and as such this objection is now moot.

***Claim Rejections – 35 U.S.C. §112***

At paragraph 2 claims 1-15, 17-27, 29-31, 33-38, 40-45, 47-52, and 54-67 were rejected under 35 U.S.C. §112, second paragraph as being incomplete for omitting essential steps, amounting to a gap between steps.<sup>1</sup> The Examiner cites dependent claim 4 as the omitted step.

The Applicant respectfully requests reconsideration of this rejection, as the Applicant believes it is contradicted by the MPEP, established case law, and the facts of this case.

To summarize the issues, the Applicant's claim 1, representative in part of the other rejected claims, sets forth:

1. (PREVIOUSLY PRESENTED) A policer based on Random Early Detection (RED), comprising:

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<sup>1</sup> As a preliminary matter, the Applicant believes citation of **second** paragraph is misplaced as MPEP 2172.01 states that "A claim that omits matter disclosed to be essential to the invention...may be rejected under 35 U.S.C. §112, **first** paragraph" (emphasis added).

a filter to determine a filtered virtual time debt, the filtered virtual time debt determined based on an average difference between a time packets are expected to arrive and a time the packets actually arrive; and

a control law circuit to receive the filtered virtual time debt from the filter and to determine whether a packet should be dropped.

The Applicant's claim 4 describes a specific mathematical formula that may in some embodiments be employed by the filter, specifically:

4. (PREVIOUSLY PRESENTED) The RED policer of claim 1, wherein the filter is based on an exponential weighted moving average (EWMA) virtual time delay using the expression,

$$EWMA_k = (1-g)EWMA_{k-1} + g(VTD)_k,$$

where k indicates the presently received packet, and k-1 indicates the last packet received, the virtual time debt (VTD) is computed by the expression:  $VTD = T(\text{packet expected to arrive}) - T(\text{packet actually arrives})$ , and g is the gain of the filter.

The MPEP at §2172.01 states that a claim that omits "essential subject matter" may be rejected and cites to MPEP §2164.08(c). MPEP §2164.08(c) titled "Critical Feature Not Claimed" reads in full, emphasis added:

A feature which is taught as critical in a specification and is not recited in the claims should result in a rejection of such claim under the enablement provision section of 35 U.S.C. 112. See *In re Mayhew*, 527 F.2d 1229, 1233, 188 USPQ 356, 358 (CCPA 1976). ***In determining whether an unclaimed feature is critical, the entire disclosure must be considered. Features which are merely preferred are not to be considered critical. In re Goffe***, 542 F.2d 564, 567, 191 USPQ 429, 431 (CCPA 1976).

Limiting an applicant to the preferred materials in the absence of limiting prior art would not serve the constitutional purpose of promoting the progress in the useful arts. Therefore, ***an enablement rejection based on the grounds that a disclosed critical limitation is missing from a claim should be made only when the language of the specification makes it clear that the limitation is critical for the invention to function***

***as intended. Broad language in the disclosure, including the abstract, omitting an allegedly critical feature, tends to rebut the argument of criticality.***

As is apparent, MPEP §2164.08(c) emphasizes that a feature is **not** critical if it is merely a preferred embodiment and that a rejection should only been made when language in the specification makes clear that the limitation is critical.

The cases cited in the MPEP further emphasize that an essential step rejection is only appropriate in certain narrow situations. Specifically, the Court of Customs and Patent Appeals reversed the Patent Office and stated *In re Goffe*, 542 F.2d 564, 567 (CCPA 1976 (emphasis added):

For all practical purposes, the board would limit appellant to claims involving the specific materials disclosed in the examples, so that a competitor seeking to avoid infringing the claims would merely have to follow the disclosure in the subsequently-issued patent to find a substitute. However, to provide effective incentives, claims must adequately protect inventors. ***To demand that the first to disclose shall limit his claims to what he has found will work or to materials which meet the guidelines for "preferred" materials in a process such as the one herein involved would not serve the constitution purpose of promoting the progress of the useful arts.*** See *In re. Fuetterer*, 319 F.2d 259, 265, 50 CCPA 1453, 1462 (1963).

Accordingly we hold the rejection of claims 1-10, 14-16, 20-23, and 26-28 under 35 U.S.C. §112, first paragraph was erroneous.

The Applicant has enclosed a copy of *In re Goffe* herewith in case the Examiner does not have ready access to court rulings.

While in the Office Action at page 3, the Examiner comments that "according to the specification this step is one necessary for the invention to work," this is simply **not** the case. In contrast, in the Specification that Applicant repeatedly emphasizes that use of an exponential weighted moving average (EWMA), described by the expression  $EWMA_k = (1-g)EWMA_{k-1} + g(VTD)_k$ , is merely a preferred embodiment and **not** essential.

For instance, in the Summary of the Invention at page 5, lines 12-14, the Applicant states (emphasis added):

The RED policer calculates a filtered virtual time debt, *for example* by using an Exponential Weighted Moving Average (EWMA) filter.

Later, at page 7, lines 8-11, the Applicant states (emphasis added):

As shown in Fig. 4 in more detail, the policer 400 based on Random Early Detection (RED) uses a running estimate (*which in one instance*, is based on an exponential weighted moving average (EWMA)) of the average packet flow and is shown as filter block 404.

Also, at page 8, lines 27-28, the Applicant states (emphasis added):

*As an example*, the filter operation may be based on an EWMA low-pass filter, which is expressed as:

$$F_k = (1 - g)F_{k-1} + g(VT_{-now})$$

Also, in the Abstract at page 16, lines 4-6, the Applicant states (emphasis added):

*For instance*, because the RED policer uses a running estimate such as an exponential weighted moving average (EWMA), for example, it allows the policer to absorb traffic bursts.

And finally, at page 11, lines 17-19, the Applicant states (emphasis added):

*It will however be apparent that other variations and modifications may be made* to the described embodiments, with the attainment of some or all of their advantages.

Thus, rather than indicate the use of a EWMA specified by the formula  $EWMA_k = (1-g)EWMA_{k-1} + g(VTD)_k$  is essential or critical to the invention, the

Applicant goes to great efforts to make clear EWMA is but one example of a technique that may be used.

Indeed, several alternatives to the use of EWMA are well known in the art and thus one of ordinary skill in the art reading the Specification would understand that use of EWMA is not essential. For example, the paper “RED in a Different Light,” demonstrative of the level of skill in the art, and cited to in both the Specification and an Information Disclosure Statement filed in the case, discusses the alternative use of arithmetic mean, at page 12 stating (emphasis added):

*To filter a building queue, we could use the arithmetic mean* of the last P samples but employing an exponential weighted moving average (EWMA) of the samples allows for efficient implementations as in [reference citation].

Thus, in accord with the above cited MPEP sections, case law, and facts, and particularly in light of MPEP §2164.08(c) that states a rejection “should be made only when the language of the specification makes it clear that the limitation is critical for the invention to function as intended,” the Applicant respectfully requests reconsideration and issue of a notice of allowance.

In the event that the Examiner deems personal contact desirable in disposition of this case, the Examiner is encouraged to call the undersigned attorney at (617) 951-2500.

In summary, all the independent claims are believed to be in condition for allowance and therefore all dependent claims that depend there from are believed to be in condition for allowance. The Applicant respectfully solicits favorable action.

Please charge any additional fee occasioned by this paper to our Deposit Account  
No. 03-1237.

Respectfully submitted,



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## C

United States Court of Customs and Patent Appeals.

Application of William L. GOFFE.

**Patent Appeal No. 75-621.**

Oct. 7, 1976.

Appeal was taken from a decision of the Patent and Trademark Office Board of Appeals, Serial No. 755,306, affirming the rejection of claims 1-28 and 31-33 in application for imaging system. The Court of Customs and Patent Appeals, Miller, J., held that under the record, rejection of claims was improper.

Reversed.

# West Headnotes

## [1] Patents 291 ⇌ 113(6)

291 Patents

291IV Applications and Proceedings Thereon

291k113 Appeals from Decisions of Commissioner of Patents

291k113(6) k. Review on Appeal in General. Most Cited Cases

Record established that disclosure provided sufficient guidance for one skilled in art to practice invention as claimed without undue experimentation so that rejection by Patent and Trademark Office Board of Appeals of claims 1-10, 14-16, 20-23 and 26-28 of application for imaging system on the basis that disclosure in specification was not commensurate in scope with claims was erroneous. 35 U.S.C.A. § 112.

## [2] Patents 291 ⇌ 99

291 Patents

291IV Applications and Proceedings Thereon

291k99 k. Description of Invention in Specification. Most Cited Cases

In determining whether an unclaimed feature is critical, entire disclosure must be considered; broad language in disclosure, including the abstract, omitting an allegedly critical feature tends to rebut argument of criticality and features

that are merely preferred are not critical.

## [3] Patents 291 ⇌ 113(6)

291 Patents

291IV Applications and Proceedings Thereon

291k113 Appeals from Decisions of Commissioner of Patents

291k113(6) k. Review on Appeal in General. Most Cited Cases

Under the record, rejection by Patent and Trademark Office Board of Appeals of claims 1-13, 17-26 and 31-33 in application for imaging system because of failure to define the agglomerable layer as embedded within softenable layer was erroneous. 35 U.S.C.A. § 112.

\*564 George J. Cannon, Xerox Corp., Patent Dept., Rochester, New York, atty. of record, for appellant.

Joseph F. Nakamura, Washington, D. C., for the Commissioner of Patents; Jack E. Armore, Washington, D. C., of counsel.

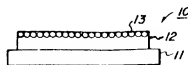
Before MARKEY, Chief Judge, and RICH, BALDWIN, LANE and MILLER, Associate Judges.

MILLER, Judge.

This appeal is from the decision of the Patent and Trademark Office (PTO) Board \*565 of Appeals affirming the rejection of claims 1-28 and 31-33 in application serial No. 755,306, filed August 26, 1968, for "Imaging System." We reverse.

### *The Invention*

Appellant's invention is illustrated by Figure 1:



**FIG. 1**

An image is formed on an imaging member 10 comprising substrate 11, softenable layer 12, and agglomerable layer 13. The particles of layer 13 are agglomerated (fused together

into a smaller number of larger spheres of less total surface area) imagewise by localized application of solvent or heat. This renders the selected areas more transparent than the remaining area.

Claim 1, the only independent claim, is set forth with disputed portions in italics:

1. An imaging method comprising the steps of:

(a) providing an imaging member comprising a non-gaseous agglomerable layer contacting a softenable layer, said softenable layer or said agglomerable layer capable of being softened pursuant to the imagewise softening step below; and

(b) imagewise softening said softenable layer or said agglomerable layer or both to cause agglomeration of non-gaseous portions of said agglomerable layer in said imagewise softened areas of said member whereby said member in said imagewise softened areas is made more transparent compared to non-imagewise softened areas of said member.

### *The Rejections*

The board affirmed the rejection of claims 1-10, 14-16, 20-23, and 26-28 under 35 U.S.C. s 112, first paragraph, on the basis that the disclosure in appellant's specification is not commensurate in scope with the claims more particularly, with the word "agglomerable" in the phrase "non-gaseous agglomerable layer" which appears in the claims. It said:

The claims merely recite an effect, and the specification does not adequately instruct one skilled in the art how to determine the scope of materials which may be capable of producing the desired effect (agglomerate) under the conditions of the claimed method (i. e., by imagewise softening). For example, there is no indication that there is any relationship between the capacity to agglomerate and any property (chemical or physical) of the material to be selected. The limited disclosure of selenium compositions, sulfur and "dyed" polyvinylcarbazole does not, nor is it asserted to, define any known type or class of material from which the skilled chemist would be able to ascertain other substances with like or analogous agglomeration properties. Further, as pointed out by the examiner, there appears to be some doubt as to the exact nature of the process which is responsible for

causing the agglomeration; therefore, the skilled worker would have no guide as to the type of materials which might be applicable in the process other than those specifically disclosed. The scope of the materials intended to be covered by the claims cannot, therefore, be determined by reference to the specification but only through undue experimentation

... If "agglomerable" is to be given its ordinary dictionary meaning as urged (by appellant) . . . , then the claims would read on any liquid or solid (liquefiable under the reaction conditions) since all liquids tend to agglomerate (e. g., water, mercury, oils, etc.). Accordingly, the disclosure is not commensurate in scope with that which is contemplated by the claim language.

The board also affirmed the rejection of claims 1-13, 17-26, and 31-33 under 35 U.S.C. s 112, first paragraph, for failing to define the agglomerable layer as embedded \*566 within the softenable layer. It adopted the examiner's reasoning that the specification requires that the softenable layer be such that it can be rendered more permeable to the agglomerable layer migrating substantially laterally through its bulk and that this migration could only occur when the agglomerable layer is at least partially embedded in the softenable layer. It concluded, therefore, that the claims read on a configuration not intended to be included within the concept described in the specification.

### OPINION

#### *Sufficiency of disclosure re "non-gaseous agglomerable layer"*

[1] On the record before us, we are persuaded that appellant's disclosure provides sufficient guidance for one skilled in the art to practice the invention as claimed without undue experimentation.[1][1] No question is raised over the fact that appellant's disclosure is "enabling" insofar as no experimentation is required to enable one of ordinary skill in the art to practice the invention as disclosed. The PTO's objection is simply that undue experimentation would be required to determine "suitable agglomerable materials," other than those specifically disclosed. There is no suggestion that the area of technology is particularly complex or unpredictable. See In re Coleman, 472 F.2d 1062, 1064 (Cust. &

Pat.App.1973). We note that the claims are to a process and that there are nine specific examples. Moreover, the manner in which the agglomerable layer operates is explained:

FN1. Appellant makes the argument, inter alia, that there is no statement in his disclosure that has been questioned by the PTO and that the accuracy of statements in the disclosure is the PTO's only relevant concern; therefore, the rejection should be reversed, citing In re Marzocchi, 439 F.2d 220, 58 CCPA 1069 (1971). However, Marzocchi involved the issue of the truth of the disclosure in the specification not the issue of "undue experimentation." In re Scarbrough, 500 F.2d 560 (Cust. & Pat.App.1974).

Agglomerate and the several variant forms thereof used herein defines the effect of substantial massing or fusing together of the imagewise softened portions of layer 13 to greatly reduce the cross-sectional area and transparentize or effect a color change of layer 13 in said areas, the color change associated with the light scattering caused, for example, by the particles in the imaged areas of a particle layer 13 . . . , which may be accompanied by some dispersing of individual portions or particles of layer 13 in depth in layer 12 which produce additional transparentizing and color changes; specifically including the massing together of closely packed particles into a smaller number of larger spheres of less total surface area.

Optimum, FN2 preferred, FN3 and "suitable" FN4 examples of agglomerable materials are set forth, and they indicate that there is a wide latitude in the choice of materials that can be used. See In re Goffie, 526 F.2d 1393 (Cust. & Pat.App.1975). The properties of preferred agglomerable materials are also disclosed: a low glass transition temperature, FN5 i. e. generally below about 50a and 60a C, and a high absorption coefficient in the visible spectrum.

FN2. Predominantly (greater than 50% by weight) amorphous selenium "of an average particle size preferably between about 0.1 and about 0.5 microns."

FN3. Crystalline selenium, amorphous selenium, amorphous selenium alloyed with arsenic, telluri-

um, antimony, bismuth; amorphous selenium or its alloys doped with halogens; tellurium and mixtures of amorphous selenium and one or more crystalline forms of selenium including the monoclinic and hexagonal forms.

FN4. "Any suitable agglomerable material may be used . . . sulfur, dyed polyvinyl carbazole and others."

FN5. The glass transition temperature is that at which an amorphous material changes from a brittle to a plastic state. Condensed Chemical Dictionary 418 (8th ed. 1971).

The board suggests that the claims "would read on any liquid or solid (liquefiable under the reaction conditions) since all liquids tend to agglomerate (e. g., water, mercury, oils, etc.)." However, we disposed \*567 of a similar argument in In re Geerdes, 491 F.2d 1260, 1265 (Cust. & Pat.App.1974), thus:

(W)e cannot agree with the board's determination that the claims are inclusive of materials which would not apparently be operative in the claimed process. . . . Having stated the objective . . . together with the process steps, use of materials which might prevent achievement of the objective . . . can hardly be said to be within the scope of the claims.

For all practical purposes, the board would limit appellant to claims involving the specific materials disclosed in the examples, so that a competitor seeking to avoid infringing the claims would merely have to follow the disclosure in the subsequently-issued patent to find a substitute. However, to provide effective incentives, claims must adequately protect inventors. To demand that the first to disclose shall limit his claims to what he has found will work or to materials which meet the guidelines specified for "preferred" materials in a process such as the one herein involved would not serve the constitutional purpose of promoting progress in the useful arts. FN6 See In re Fuetterer, 319 F.2d 259, 265, 50 CCPA 1453, 1462 (1963).

FN6. We note that no prior art was relied on by the PTO.

Accordingly, we hold that the rejection of claims 1-10, 14-16, 20-23, and 26-28 under 35 U.S.C. § 112, first paragraph, was erroneous.

*Sufficiency of disclosure re "contacting"*

The PTO position is that the definition of the softenable layer, quoted below from the specification, is such that at least partial embedment of the agglomerable layer is critical and that the phrase "agglomerable layer contacting a softenable layer" in the claims omits this critical feature.

"Softenable" as used herein to describe layer 12 is intended to mean any material which can be rendered more permeable to material or particles of layer 13 migrating substantially laterally through the bulk of layer 12. (Emphasis added.)

[2] In determining whether an unclaimed feature is critical, the entire disclosure must be considered. Broad language in the disclosure (including the abstract) omitting an allegedly critical feature tends to rebut the argument of criticality. In re Anderson, 471 F.2d 1237 (Cust. & Pat.App.1973). Also, features that are merely preferred are not critical. In re Armbruster, 512 F.2d 676 (Cust. & Pat.App.1975); In re Geerdes, supra.

The above-quoted definition concerns only a property of the softenable layer and does not recite that the agglomerable material must migrate through layer 12. The abstract uses the broad term "contacting." The specification describes embedment of layer 13 in layer 12 as "preferred." It recites that agglomeration "may be accompanied by some dispersing of individual portions or particles of layer 13 in depth in layer 12 which produce additional transparentizing and color changes . . . ." (Emphasis added.) The disclosure of how to make the agglomerable layer tends to show that it may rest entirely on the surface of the softenable layer. Thus, after describing the formation of the agglomerable layer by vacuum evaporation, cascading, or dusting, the specification discloses that "(i)f thicker coatings are desired, layer 12 may be softened slightly by heating, for example, to permit particles deposited on its surface to seat themselves . . . into the plastic after which additional particles may be cascaded across or dusted over the softenable layer 12." (Emphasis added.) Finally, an embodiment is described in which the

agglomerable layer does not appear to be embedded in the softenable layer agglomerable particles are dispersed in a binder, and the binder layer is "placed on a softenable layer or sandwiched between softenable layers to create an imaging member." (Emphasis added.)

[3] We therefore hold that the rejection of claims 1-13, 17-26, and 31-33 for failing to define the agglomerable layer as embedded within the softenable layer was erroneous.

\*568 In view of the foregoing, the decision of the board is reversed.

REVERSED.

Cust. & Pat.App. 1976.

Application of Goffe

542 F.2d 564, 191 U.S.P.Q. 429

END OF DOCUMENT